



## LP5951

Preliminary

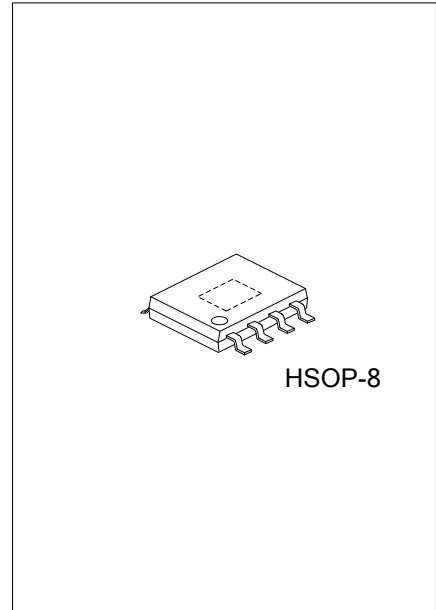
LINEAR INTEGRATED CIRCUIT

### HIGH INPUT VOLTAGE, LOW QUIESCENT CURRENT, 150mA LDO REGULATOR

#### DESCRIPTION

The **UTC LP5951** is a low ground current linear regulator which operates with input voltage from 6.5V ~ 25V and delivers output current up to 150mA. Typical dropout voltage is only 450mV at 150mA loading.

The **UTC LP5951** has many protection functions including over temperature and current limit which prevent the device from thermal over-load and current over-load.



#### FEATURES

- \* Wide Operating Voltage : 6.5V~25V
- \* Ultra Low Ground Current :120μA
- \* High Output Accuracy : ±2% over temperature
- \* Excellent Load/Line Transient
- \* Low Dropout Voltage : 450mv @ 150mA
- \* Built-in Current Limit Protection
- \* Built-in Over Temperature Protection
- \* Zero Shutdown Current

#### ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
LP5951L-xx-SH2-R	LP5951G-xx-SH2-R	HSOP-8	Tape Reel
LP5951L-xx-SH2-T	LP5951G-xx-SH2-T	HSOP-8	Tube

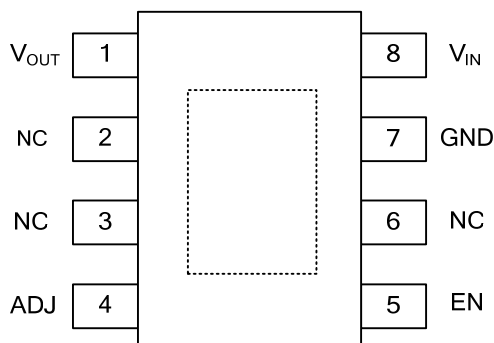
Note: xx: Output Voltage, refer to Marking Information.

<p>LP5951L-xx-SH2-R</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) SH2: HSOP-8</p> <p>(3) xx: Refer to Marking Information</p> <p>(4) G: Halogen Free, L: Lead Free</p>
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■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
HSOP-8	AD :ADJ	

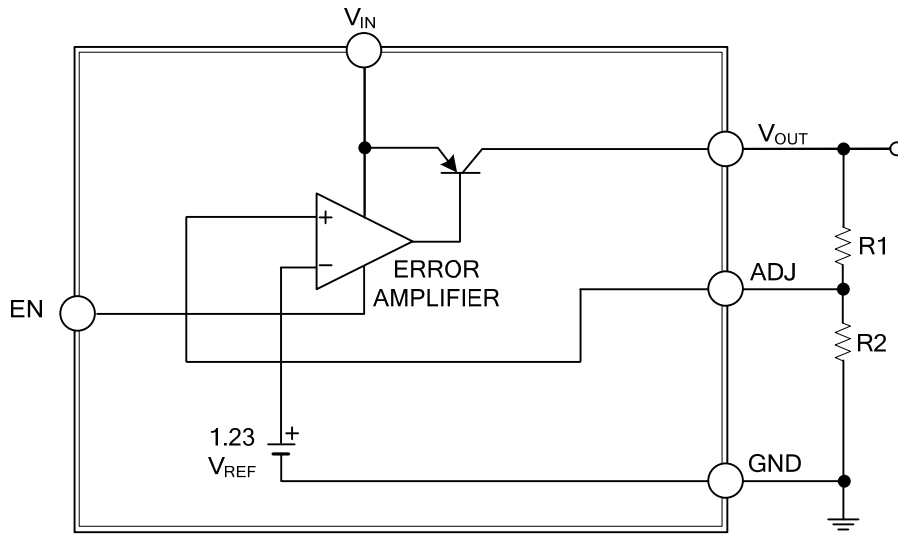
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V <sub>OUT</sub>	output pin
2, 3, 6	NC	No Connection
4	ADJ	ADJ: output feedback pin
5	EN	ON/OFF pin, low=output ON; high=output OFF
7	GND	Ground
8	V <sub>IN</sub>	Input pin

■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	-0.3~+27	V
Feedback Voltage	$V_{FB}$	-1.5~+27	V
Shutdown Voltage	$V_{SHDN}$	-0.3~+27	V
Power Dissipation	$P_D$	Internally Limited	W
Junction Temperature	$T_J$	+125	°C
Storage Temperature	$T_{STG}$	-65~+150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ THERMAL DATA

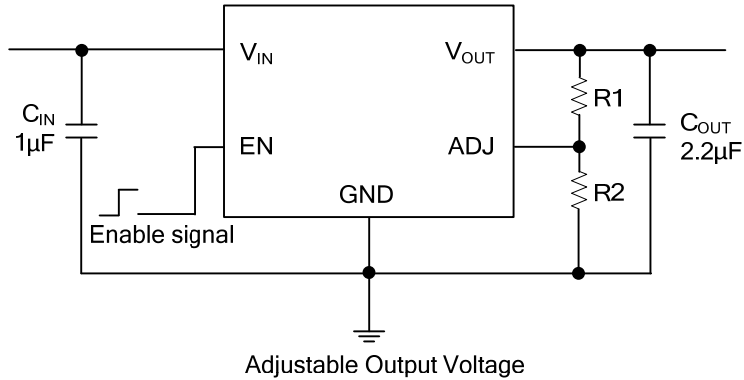
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	50	°C/W
Junction to Case	$\theta_{JC}$	20	°C/W

### ■ ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, these specifications apply over  $V_{IN}=V_{OUT}+2.5V$ ,  $C_{IN}=1\mu F$ ,  $C_{OUT}=2.2mF$ ,  $T_A=-40^\circ C \sim 85^\circ C$ . Typical values refer to  $T_A=25^\circ C$ .)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN}$		6.5		25	V
Output Voltage Accuracy	$V_{OUT}$		-2		2	%
Output Voltage Range			3		20	V
Quiescent Current	$I_Q$	$I_{OUT}=0.1mA$	75	120	140	$\mu A$
		$I_{OUT}=150mA$	8	12	22	mA
Load Current Range	$I_{OUT}$		0		150	mA
Reference Voltage	$V_{REF}$		-2%	1.235	+2%	V
Line Regulation	$\Delta V_{OUT}$	$V_{OUT}+2.5V < V_{IN} < 25V$ , $I_{OUT}=1mA$		0.1	0.2	%
Load Regulation	$\Delta V_{OUT}$	$0.1mA < I_{OUT} < 150mA$		0.2	0.5	%
Dropout Voltage	$V_D$	$I_{OUT}=0.1mA$	50	80	150	mV
		$I_{OUT}=150mA$	380	450	600	
<b>PROTECTION</b>						
Over Temperature Shutdown	OTS			150		°C
Circuit Current Limit	$I_{LIMIT}$	$V_{IN}=V_{OUT}+2.5V$	250	350	500	mA
Short Current	$I_{SHORT}$	$V_{OUT}=0V$		50		mA
<b>SHUTDOWN</b>						
Input High Voltage	$V_{EN}$		2			V
Input Low Voltage					0.7	
EN pin Input Bias Current	$I_{EN}$	$V_{EN}=25V$		450	600	$\mu A$
Shutdown Supply Current	$I_{QSHDN}$	$EN=High$ , $V_{IN}=19V$		0.1	1	mA

■ TYPICAL APPLICATION CIRCUIT



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